UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

PETER A. HOCHSTEIN, et al. Plaintiffs, v. MICROSOFT CORPORATION, Defendant.	Hon. Paul D. Borman Magistrate Donald A. Scherer Case No: 2:04-CV-73071-PDB-DAS

SPECIAL MASTER'S SUPPLEMENTAL REPORT

1. This report is submitted in response to defendant Microsoft's motion for leave to file a motion for partial summary judgment of noninfringement of claim 15 of the patent in suit. Microsoft moved in 2005 for summary judgment of noninfringement of all asserted claims. That motion was the subject of an earlier report by the undersigned, which was later adopted by the court.

2. In its present motion Microsoft focuses on the claim element "voice over data means" and contends that under the Federal Circuit's recent decision in *Aristocrat Technologies Australia Pty Ltd. v. International Game Technology,* 521 F.3d 1328 (Fed. Cir. 2008) the construction I previously chose for this element in my report on the 2005 summary judgment motions (see report of January 2007) is incorrect and needs to be revised. Plaintiffs Hochstein et al. (hereafter Hochstein) contends the previous construction was correct, even under *Aristocrat,* and should stand.

3. Microsoft is correct that *Aristocrat* warrants revision of my previous interpretation, as detailed herein. I nevertheless recommend that Microsoft's effort to obtain summary judgment of noninfringement of claim 15 be denied.

A. The Issue

4. Claim 15 is drawn to a video game communication assembly for two or more players, where one player is located at a distance from the others. The remote player can issue video commands that will show up on the local player's screen and can

also indulge in voice communication with the local player, all over a single communication channel such as a telephone line. The communications are two-way, i.e., the local player can likewise send voice and video commands to the remote player.

5. The claim phrase under consideration here is:

> voice over data means (134) for simultaneously receiving voice signals and said communication signals and for transmitting said communication signals to said modem means (114).

6. In my prior report I discussed this "voice over data means" recitation of claim 15 as involving a broad algorithm (set of logical steps) for programming a microprocessor: combining of voice and data signals, transmitting them over a single communication channel, and separating them out at the other end. 2007 Report ¶ 39. Microsoft is right in pointing out that the language now under discussion strictly implicates only the separating out portion of it, i.e., the receiving language. More importantly, Microsoft is right in arguing that the previous identification of the programming algorithm was, under *Aristocrat,* too broadly stated. Finally, Microsoft also continues to urge, as it did in its original 2005 noninfringement motion, that in its XBox product as arranged for distant play, none of the received signals is transmitted to a modem as required by the claim; rather, the cable modem used by the player handles the received signals first, before they are separated out into voice and commands.

7. *Aristocrat* is a recent case in what has now become a substantial line of Federal Circuit decisions addressing the problem of assigning the proper scope to a means-plus-function claim expression where the means disclosed is a microprocessor. In *WMS Gaming Inc. v. Int'l Game Tech.,* 184 F.3d 1339, 1349 (Fed. Cir. 1999), the court held that the structure covered in such a situation was not the microprocessor standing alone, but the microprocessor programmed to carry out an algorithm (i.e., set of logical steps) disclosed in the patent specification. *AllVoice Computing PLC v. Nuance Communications, Inc.,* 504 F.3d 1236 (Fed. Cir. 2007), extended this to indicate that the algorithm needed to be disclosed only to the extent needed by a person skilled in the art to understand where the claim boundary lies. *Id.* at 1244.

8. The 2008 *Aristocrat* decision added several important teachings to the case law in this area, perhaps the most important here being: "Because general purpose

computers can be programmed to perform very different tasks in very different ways, simply disclosing a computer as the structure designated to perform a particular function does not limit the scope of the claim to 'the corresponding structure, material, or acts' that perform the function, as required by section 112 paragraph 6." 521 F.3d at 1332. And merely describing the result obtained by the computer is not sufficient; the algorithm by which the result is obtained must be described. *Id.* at 1334. Moreover, asserting that one skilled in the art would readily know how to program the microprocessor is, even if true, insufficient to satisfy 112(6),[1] because the purpose of this part of the patent statute is not enablement but defining limits or boundaries of the claim. *Id.* at 1336.

9. Microsoft is right in urging here that something more specific is required under *Aristocrat* than the generalized functions I identified as the algorithm in my earlier report. Algorithms can be expressed in varying degrees of specificity, all of which are in a sense "correct."[2] A few weeks after *Aristocrat* came down, the Federal Circuit decided *Finisar Corp. v. DirecTV Group, Inc.,* 523 F.3d 1323 (Fed. Cir. 2008). There the court looked at the question of *how much* disclosure of an algorithm is needed to be described in a patent's specification in order to comprise a "structure" within the meaning of 35 U.S.C. § 112, para. 6, in microprocessor cases. Having discussed the earlier case law, the court said:

> Thus the patent must disclose, at least to the satisfaction of one of ordinary skill in the art, enough of an algorithm to provide the necessary structure under § 112 , ¶ 6. This court *permits a patentee to express that algorithm in any understandable terms* including as a mathematical formula, in prose [citation omitted], or as a flow chart, or in any other manner that provides sufficient structure.

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[1] 35 U.S.C. § 112, para. 6 provides: "An element in a claim of a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim *shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.*" Emphasis added.

[2] For example, the operation of adding one number to another can be expressed simply as Add A to B. But it can also be expressed as the whole set of smaller steps like those we do in longhand decimal arithmetic, i.e.: aligning the two numbers; adding their least significant [right-hand] digits; if the result is less than 10, entering the result as part of the answer, but if 10 or more . . . . [carry operations]; etc.

Id. at 1340, emphasis added.

10. The *Finisar* court also noted: "This court does not impose a lofty standard in its indefiniteness cases." *Id.* at 1341. Strictly speaking, the present motion does not deal with indefiniteness. Microsoft's motion is framed as noninfringement. However, the court's comment about a non-lofty standard for judging indefiniteness is apt here as well. On both issues the scope of a means-plus-function expression needs to be determined. If the claim has *no* scope it is ruled indefinite. If it has some scope but not enough to cover the accused product, it is ruled noninfringed. The exercise is fundamentally the same, requiring a search for a disclosed algorithm for programming the microprocessor to perform the desired functions.

11. With this judicial guidance in mind, we address the question at hand. Microsoft contends the '125 patent specification contains no algorithm at all for telling a skilled person how to program the microprocessor 170 in Fig. 3 of the patent to carry out the receiving function recited in the claim, i.e., "simultaneously receiving voice signals and said communication signals and for transmitting said communication signals to said modem means (114)." Hochstein contends the specification, read in its entirety, discloses that the voice and communication (game command) signals need to be separated from each other, with the latter then sent to a modem for conversion back to digital signals that the game equipment can recognize. Hochstein supports the broad algorithm reading used in my earlier report and adopted by the court. *Aristocrat* requires a more detailed disclosure of how to program the microprocessor. We must therefore again look to the patent specification and drawings to see if such a programming algorithm is disclosed to the satisfaction of persons skilled in the art.

B. The Patent Drawings Figs. 2 and 3 Describe the Same Embodiment

12. In asserting their positions, both parties appear to take a view with which I cannot agree, i.e., that two embodiments of the claimed subject matter are shown in the specification and drawings, that of Fig. 2 and that of Fig. 3. Curiously, Hochstein at the same time argues that Fig. 3 is a portrayal of circuitry and Fig. 2 is a kind of flow diagram for how to program that circuitry of Fig. 3. See Tr. 21; Hochstein presentation

slides 6 and 13. If that latter view is correct, only a single embodiment is disclosed in the two figures. For the reasons that follow, I believe this is the case.

13. I adopted the two-embodiment view in my initial report, but I now think it is not correct. The specification describes the patent drawings as follows: "FIG. 2 is a block diagram *of the preferred embodiment* of the subject invention; and FIG. 3 is a schematic diagram of the circuitry *of the preferred embodiment* of the subject invention." Col. 2, lines 53-56, emphasis added. This is classical patent language for indicating that only one embodiment, the preferred one, is depicted in the drawings. Fig. 2 shows what is going on, and Fig. 3 shows circuitry for carrying it out. If two *different* embodiments were being disclosed, the language would normally read "Fig. 3 shows an alternative embodiment of the present invention," or "another version," or words of similar import. Instead, in the '125 patent we are being shown the same embodiment in two different formats, Fig. 3 showing circuitry and Fig. 2 showing what is going on in that circuitry.

14. In addition to the patent's very clear description of the drawings, common reference numerals are used for most of the subsystem labels in Figs. 2 and 3. For example, the control portion is labeled 106, and the modem is labeled 114. The "voice over data circuit" block in Fig. 2 is labeled 134. The specification, in speaking about the same block in Fig. 3, calls it "voice over data circuit 134." Col. 8, line 7.[3] This is further verification that a single embodiment is being discussed.

15. To be sure, the patent is not 100% consistent in referring to Figures 2 and 3 as two ways of disclosing the same structure. The phone lines carry different reference numerals, and the specification's introduction of the microprocessor shown as such in Fig. 3 begins with the word "alternatively," suggesting that it is something different from what is shown in Fig. 2: "Alternatively, in FIG. 3, the voice over data circuit 134 includes a microprocessor 170." Col. 8. lines 7-8. And the discussion surrounding Fig. 2 sometimes sounds like analog hardware filters are being shown there rather than a roadmap for programming the microprocessor of Fig. 3 to produce digital filters.

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[3] This block in Fig. 3 carries no separate reference numeral, perhaps due to a draftsman's oversight. In any event, there is nothing to suggest that it is anything different from the similarly labeled block shown in diagram form in Fig. 2.

16. Despite these occasional inconsistencies, I still have to conclude that in view of how both of the drawings are explicitly described as "the preferred embodiment," plus the commonality of reference numerals, the specification is telling us that only one embodiment is being shown, and that Figs. 2 and 3 are two different ways of portraying that embodiment. Fig. 2 is, as Hochstein says, like a flow diagram for Fig. 3. At the July 18, 2008 hearing on the present motion, Hochstein's counsel, Mr. LeRoy, stated "Figure two, I believe, is a flow chart, so that doesn't really limit us one way or the other." Tr. 27.

17. With that background, we now investigate whether Fig. 2 and its accompanying discussion in the specification amount to disclosure of an algorithm for programming the microprocessor 170 in the circuitry of Fig. 3.

C. Looking for the Receiving Algorithm

18. Neither side has presented meaningful expert evidence on the question of whether the patent specification sets forth such a receiving algorithm. As mentioned in my 2007 report, Plaintiffs' expert, Dr. Jamin, stated in his August 2005 declaration that a person skilled in the art as of 1990 "was certainly capable of programming a microprocessor to perform the combining and separating of signals as described in the '125 patent. Jamin 8-12-05 decl. ¶¶ 5, 6, 8. Such conclusions about enablement were held in *Aristocrat* to be insufficient disclosure of an algorithm for a microprocessor. 521 F.3d at 1334 ("Aristocrat's real point is that devising an algorithm to perform that function would be within the capability of one of skill in the art, and therefore it was not necessary for the patent to designate any particular algorithm to perform the claimed function. As we have noted above, however, that argument is contrary to this court's law.") On the other side, Microsoft has presented no expert evidence on this subject in support of its motion.[4]

19. From a *non*-skilled-in-the-art point of view, I would have to concur with Microsoft that the '125 patent specification does not *explicitly* lay out an algorithm that lists steps for programming a microprocessor to carry out the receiving portion of the

[4] When questioned about this at the July 18, 2008 hearing on the present motion, Microsoft's counsel stated: "I think the only expert testimony that's specifically on point for this is that which was cited Professor Jamin, which was cited in both by Plaintiffs and in your report, recommendation." Tr. 4.

voice over data function of claim 15. However, the non-skilled view is not the pertinent one. We need to bear in mind that disclosure of an algorithm depends on the understanding of skilled persons, which we do not have in the record here.

20. From *Finisar* we know that no particular form for the algorithmic teaching is required. *Finisar* says the algorithm disclosure can be in prose, or in any other terms understandable to a person skilled in the art. Since Figs. 2 and 3 portray the same preferred embodiment in different forms, the blocks of Fig. 2 and the accompanying text from the specification need to be considered in determining whether they amount, in the eyes of skilled persons, to disclosure of an algorithm for how the microprocessor shown in Fig. 3 portrayal should be programmed to carry out the receiving-and-sending-to-modem function recited for the voice over data means in the claim. Absent expert evidence, it seems to me impossible to pronounce a summary judgment that there is no appropriate algorithm disclosed in the specification.

21. Quite apart from microprocessors and their algorithms, there is something else standing in the way of Microsoft's request for summary judgment. That is the disclosure of filters in the '125 patent, even if read without regard to microprocessors. The patent specification here is clearly intended to be generic about filters and not limited to any particular way of filtering. In a passage that is not keyed uniquely to any kind of filtering circuitry, the specification states:

> The method includes the steps of filtering out the communication signals received from the communication medium from other signals. The other signals can be noise or voice signals. The voice signals are sent to the speaker 128 so the players can hear what the other player is saying, thus enhancing the competitive environment.

Col. 9, l. 17-23. That being the case, granting Microsoft's motion would amount to the court's reaching an unsubstantiated conclusion that the filtering disclosed in the patent cannot be equivalent to what Microsoft is doing with its XBox. I do not see how that conclusion can be reached on the present record. The issue remains for trial.

22. The interpretation of the phrase "voice over data means (134) for simultaneously receiving voice signals and said communication signals and for

transmitting said communication signals to said modem means (114)" should cover each of the following:

> (i) the structure of Fig. 2 when implemented with discrete analog filters and where FDM is the multiplexing scheme chosen for separating the received voice and command signals, or any equivalent of such an arrangement; and
>
> (ii) subject to concurrence by persons skilled in the art, the structure of Fig. 3 where a microprocessor is programmed in the manner depicted in Fig. 2 and the accompanying specification text, including the method of operation text, to receive voice and communication signals, or any equivalent of such an arrangement.

If the reading by skilled persons shows there is no programming algorithm disclosed in the patent specification, then the interpretation would be only (i) and not (ii).

D. Issue About Modem Placement

23. There remains to be addressed the rest of the claim phrase in issue, i.e.: ". . . and for transmitting said communication signals to said modem means (114)." Although this language is not at the heart of Microsoft's present motion, Microsoft's counsel mentioned it several times in the July 2008 hearing as another reason its product does not infringe claim 15. Microsoft says the modem used with its XBox product receives all incoming signals and sends them on to the XBox, and that after processing to separate voice signals from command signals it does not send anything to the modem. I do not believe claim 15 is so restricted. Modem 114 in Figs. 2-3 is bidirectional. Hence the phrase "transmitting said communication signals to said modem means" applies in either direction. Voice, command, and hybrid packets are being sent in both directions to and from the XBox, so it transmits communication (game command) signals to the modem. Since we are dealing with a means-plus-function expression in a claim, for infringement the trier of fact will need to determine whether the XBox's operation in conjunction with a cable modem is an equivalent of the arrangement shown in Figs. 2-3.

E. Some Procedural Issues

24. Neither side's motion papers say anything much about the XBox product Microsoft wants to be ruled a noninfringement. Perhaps this is understandable in view of the present lack of closure on claim construction and the rapidly developing case law on the subject, but it presents some problems for resolution of the present motion.

25. In its present motion papers, Microsoft tells us nothing about how its accused XBox product works, other than that it "does not contain the corresponding structure of Figure 2 of the '125 patent." Br. 9. I find two problems with this position. First, it is based on an unduly narrow reading of the disclosure of Fig. 2, constraining it to the use of discrete analog devices. Second, 112(6) does not limit the literal scope of a means expression to the structures shown in the specification, but also includes equivalents of those structures. We have nothing in the motion papers by which to determine that the XBox does not correspond to Fig. 2 as properly read, or that the XBox is not equivalent to Fig. 2 as properly read.[5]

26. I also went back to Microsoft's 2005 motion papers to look for more description of the XBox. There, Microsoft's main motion brief contained a heading reading "Microsoft Does Not Infringe The Asserted Claims Because The XBox Lacks A 'Voice Over Data' 'Means' or 'Circuit.'" Br. Table of Contents. However, the body of the brief Microsoft told us little about its product, other than that it does not itself contain a modem, and that all the signals the product receives are in digital form, flagged as either voice or data. Br. 11. The brief contained Microsoft's insistence that the '125 patent's Fig. 2 and its discussion of the method of operation are limited to hardware filters, which its product does not have. However, as stated earlier, in my view claim 15 is not restricted to hardware filters. Its could also cover microprocessor-plus-algorithm implementation of a digital filter for separating voice packets, command packets, and hybrid packets, as used by the XBox; and it would also cover equivalents of either arrangement. I also reviewed Dr. Macedonia's declaration submitted in support of

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[5] Microsoft's brief on the present motion does contain this passage: "Both sides agree that the Figure 2 implementation qualifies as a 'corresponding structure,' but that structure does not help Plaintiffs because they also agree that no such structure is found in the accused Microsoft products." Br. 4. The source for Plaintiffs' asserted agreement is not given, and from the oral arguments on the present motion Plaintiffs do not appear to concur with this statement.

Microsoft's 2005 motion. There is not enough information given to determine whether a person skilled in this art would find a programming algorithm in the '125 patent specification and drawings, or by which to say categorically that the XBox arrangement operates in a nonequivalent way.

27. I realize this case has had its complications due to the fluid state of the case law, the fluid state of the interpretation of claim 15 (which is even now undergoing a recommended change), and the difficulties of finalizing the expert testimony which Hochstein will be allowed to present at trial. I also understand that the burden on a party moving for summary judgment is significantly less where the motion is on a point as to which the other side bears the burden of proof at trial. Nevertheless, in the absence of testimony by skilled persons regarding the algorithm of Fig. 2, and further expert testimony comparing such algorithm with the operation of the XBox, I cannot say that Microsoft has discharged its burden in seeking summary determination of noninfringement. Rather, I believe both issues should be sorted out in the light of further expert evidence -- the algorithm issues by the court as part of claim interpretation, and the equivalency issues by the jury at trial.

F. Conclusions

28. Microsoft's motion should be granted to the extent that it requests a revised interpretation of the voice over data means in claim 15, but denied to the extent it seeks summary judgment that (i) that the patent discloses no algorithm for the voice over data function, and (ii) that the XBox does not infringe the properly construed claim.

29. The new proposed construction for coverage of the voice over data means of claim 15 is given in paragraph 22 above.

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Paul M. Janicke, Special Master

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Date